



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/762,290	01/23/2004	Michael M. Ramarge	08215-559001	4684
26171	7590	08/01/2007		
FISH & RICHARDSON P.C. P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			EXAMINER PHAN, THIEM D	
			ART UNIT 3729	PAPER NUMBER
			MAIL DATE 08/01/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/762,290

Applicant(s)

RAMARGE ET AL.

Examiner

Tim Phan

Art Unit

3729

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-22 and 33-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-16, 18-22 and 33-39 is/are rejected.
- 7) ☒ Claim(s) 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>11/03/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The amendment filed on 1/16/07 has been fully considered and made of record.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 8, 9, 12, 14-16, 33, 36, 37 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doone (US 5,218,508).

With regard to claim 8, Doone teaches a process of making electrical surge arrester/diverter (Col. 6, lines 34+), comprising:

- providing an electrical module assembly (Fig. 1, 1) including at least one metal oxide varistor (MOV) disk (Fig. 1, 2) to which a reinforcing structure (Fig. 1, 5) has been applied;
- wrapping the electrical module assembly with shrink film (Fig. 1, 6; col. 6, lines 50-57);
- heating the shrink film (Col. 6, line 51) such that the shrink film shrinks and applies a compressive force to the electrical module assembly; except for having the heat shrink

film compacting the wrapped electrical module assembly, and

- curing reinforcing structure of the wrapped electrical module assembly at a temperature at which the shrink film no longer applies a compressive force due to its later removal (Col. 6, line 52) or tight interface between heat shrink (Fig. 1, 6; col. 6, lines 65-68) and plastic shell (Fig. 1, 5) as the sealant resin is cured (Col. 6, line 51).

It would be obvious to one of ordinary skill in the art at the time the invention was made to have the heat shrink film compacting the wrapped electrical module assembly in order to ensure that the interface between the outer housing of heat shrink material (Fig. 1, 6; col. 6, lines 66-69) and the reinforced plastic shell is void free and impervious to moisture penetration).

With regard to claim 9, Doone teaches that the shrink film is a polymeric mylar film or the like (Col. 6, line 51).

With regard to claims 12 and 14, Doone teaches that the temperature at which the wrapped electrical module assembly is compacted is of a different magnitude than the temperature at which the wrapped electrical module assembly is cured due to different materials between the shrinking tape and the sealant resin (Col. 6, lines 50-52) and due to the later step of removing the shrinking tape, which stops from further shrinking at certain temperature and therefore stops exercising further compressive force to the module.

With regard to claim 15, Doone teaches a process of making electrical surge

arrester/diverter including the heating of the shrinking tape and heat curing of the resin, which reads on applicants' claimed invention.

It would be obvious to one of ordinary skill in the art at the time the invention was made to have a cooling step after a heating step in order to handle the module.

With regard to claim 16, Doone teaches the removal of the shrinking tape (Col. 6, line 52).

With regard to claim 33, Doone teaches that the wrapping of the electrical module assembly with shrink film comprises attaching shrink film (Col. 6, line 50) to the electrical module assembly.

With regard to claim 36, Doone teaches that the wrapping of the electrical module assembly with shrink film (Col. 6, line 50) includes the securing the wrapped shrink film to the electrical module assembly due to heating.

With regard to claim 37, Doone teaches that the compacting of the wrapped electrical module assembly includes the heating (Col. 6, lines 50 & 51) of the shrink film such that the shrink film shrinks and applies a radially compressive force to the electrical module assembly.

With regard to claim 39, Doone teaches the wrapping of the electrical module assembly

with shrink film (Fig. 1, 6) comprising the attaching of the shrink film to an end of the electrical module assembly (Fig. 1, area 11) and securing the shrink film at an opposite end of the electrical module assembly with end caps (Fig. 1, 8).

4. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doone in view of Mabbott (US 5,842,096).

With regard to claims 10 and 11, Doone teaches a process of making electrical surge arrester/diverter including the heating of the shrinking tape and heat curing of the resin (Col. 6, lines 50 & 51), which reads on applicants' claimed invention.

Mabbott teaches a method of printing color image onto a surface with the application of shrinking tape with the characteristics of film shrinkage at 170 degrees Celsius for 30 minutes (Col. 7, lines 27 & 28) as Kaladex 2000, a most preferred shrinking material.

It would be obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Doone by applying the shrinking tape with its characteristics, as taught by Mabbott and not its general structure, in order to facilitate and improve manufacturing process due to its preferred quality of material.

5. Claims 13, 18-22, 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doone in view of Kester et al (US 6,008,975).

With regard to claims 13, 34 and 35, Doone teaches a process of making electrical surge arrester/diverter including the application of the shrinking tape to cover the sealant resin

(Col. 6, lines 50 & 51), which reads on applicants' claimed invention; except for having a spiral tape/film as shrink tape/film.

Kester et al teach a method of making a self-compressive surge arrester module with a spiral tape (Fig. 4, 28) wrapping around the module from one end to the other at constant pressure, in order to wrap the fibrous tape and internal resin layer (Fig. 4, 24 & 250).

It would be obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Doone by applying the wrapping tape, as taught by Mabbott and not its general structure, in order to cover completely the sealant resin.

With regard to claim 18, Doone teaches a process of making electrical surge arrester/diverter including the application of the shrinking tape to cover the sealant resin (Col. 6, lines 50 & 51), which reads on applicants' claimed invention.

Kester et al teach a method of making a self-compressive surge arrester module with a reinforcing structure (Fig. 4, 24) over the sealant resin (Fig.4, 25) and around the module assembly (Fig. 4, 10), in order to strengthen the electrical module assembly.

It would be obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Doone by applying the reinforcing structure, as taught by Mabbott, in order to strengthen the electrical module assembly.

With regard to claim 19, Kester et al teach that the compressing the electrical module assembly comprises compressing the electrical module assembly using pressure of 250 pounds or

more or approximately 0 to 1500 psi (Col. 7, lines 30-32).

With regard to claim 20, Kester et al teach that the preparing of the electrical module assembly comprises heating the electrical module assembly to a surface temperature of approximately 60 degrees Celsius (Col. 8, lines 52 & 53).

With regard to claim 21, Kester et al teach that the reinforcing structure (Fig. 4, 24; col. 6, lines 35-40) is a pre-impregnated fiber composite.

With regard to claim 22, Kester et al teach the maintaining of the electrical module's compression through curing of the reinforcing structure (Col. 7, lines 11-18).

6. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Doone in view of Avdeenko et al (US 4,298,900).

Doone teaches a process of making electrical surge arrester/diverter including the heating of the shrinking tape and heat curing of the resin (Col. 6, lines 50 & 51) with the MOV disk (Fig. 1,2) within the electrical module assembly (Fig. 1, 1), which reads on applicants' claimed invention.

Avdeenko et al teach a process of making overvoltage protective device (Figs. 6-8), comprising the steps of: axially compressing (Fig. 6, 50) the electrical module assembly and maintaining the axial compression of the electrical module assembly through curing (Fig. 7, 48) of the reinforcing structure in order to have an improved operational reliability (Col. 3, lines 35-37).

It would be obvious to one of ordinary skill in the art at the time the invention was made

to modify the method of Doone by applying the axial compression and curing of the reinforcing structure, as taught by Avdeenko et al, in order to have an improved operational reliability.

Allowable Subject Matter

7. Claim 17 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

8. Applicants' arguments filed on 1/16/07 with respect to Claims 8-16, 18-22 and 33-39 have been considered but they are not persuasive for the following reasons.

With respect to Claim 8, applicants assert *inter alia* that “Doone fails to describe ... the shrink film shrinks and applies a compressive force ... and curing the reinforcing structure ... at a temperature at which the shrink film no longer applies a compressive force” (Remarks, page 1 & 2). Doone do in deed teach the heat shrink film (Fig. 1, 6) which suggests a compressive force to the module structure due to heat shrinking effect and the curing of resin (Col. 6, line 51) at a temperature where the shrink film no longer applies a compressive force as the heat shrink

tape/film is well known to stop shrinking further at certain temperature and no longer applies a compressive force.

Applicants' citations that Mylar is not a bi-axially oriented polypropylene film, which is not a polyester film (Claim 9; Remarks, page 2, 3rd paragraph) are traversed since Mylar and polypropylene film are well known to be polymeric resin and can be interchangeable as heat shrink film as applicants do not provide an advantage or a particular purpose for using the polypropylene as shrink film.

With respect to Remarks on Claim 12, page 2, last paragraph, the same response as in Claim 8 above is applicable, which refers to the temperature limit of shrinking effect of the heat shrink film, that is not continuously proportional to the heated temperature involved.

Applicants' assertions that Doone's tape winding (Col. 6, line 50) does not secure the module assembly (Claim 36; Remarks, page 4, 2nd paragraph) are traversed, since it is well known that any wrapping will create a securing effect on the wrapped body.

In response to applicant's argument that there is no suggestion to combine the references Doone in view of Mabbott (Claims 10 & 11; Remarks, page 4, 3-5 paragraphs), the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Doone teach a process of making surge arrestor using shrink film while Mabbott teaches a heat

shrinking film. It would be obvious to one of ordinary skill in the art at the time the invention was made to combine the two teachings to modify the method of Doone by applying the shrinking tape with its improved characteristics, as taught by Mabbott and not its general structure, in order to facilitate and improve the manufacturing process due to its preferred quality of material.

With respect to Claims 13, 18-22, 34, 35, 39 and 38 (Remarks; page 5, 2nd paragraph – page 6, 2nd paragraph), the claims stand rejected as articulated in the rejection of these Claims in sections 5 and 6 and with the response to arguments of Claim 8 above.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicants' disclosure.

THIS ACTION IS MADE FINAL. Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

Art Unit: 3729


CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tim Phan whose telephone number is 571-272-4568. The examiner can normally be reached on M & Tu, 6AM - 2PM, and W & Th, 9AM – 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tim Phan
Examiner
Art Unit 3729



A. DEXTER TUGBANG
PRIMARY EXAMINER

tp
July 25, 2007